

WHAT IS CLAIMED IS:

1. A voice communication system including a line switching network to which telephones are connected, a packet switching network to which communication
5 terminals are connected and which has a communication address scheme different from a telephone number scheme of said line switching network, and a communication server connected to said line switching network and said packet switching network and assigned a communication
10 terminal address on said packet switching network, wherein:

each of said communication terminals comprises:

means for transmitting a voice communication
15 request when an apparatus with which a communication is desired is a telephone connected to said line switching network, and performing communication control between said communication server and said communication terminal to establish a connection between said
20 communication terminal and said communication server, said voice communication request including the telephone number of the telephone, and

said communication server comprises:

means for receiving a voice communication
25 request transmitted from said communication terminal to the communication terminal address of said communication server, and performing communication control between said communication server and said communication

terminal which has transmitted said voice communication request to establish a connection between said communication server and said communication terminal;

means for performing communication control

5 between said communication server and a telephone having a telephone number included in the received voice communication request to set said communication server and said telephone in a communication available state; and

10 means for receiving voice information transmitted from the telephone having said telephone number, editing said voice information into packets, and transmitting the packets to said communication terminal, while receiving packets transmitted from said
15 communication terminal, and transmitting voice information in the packets to the telephone having said telephone number.

2. A voice communication system according to claim 1, wherein said communication terminal further
20 includes:

voice inputting means for inputting voice information;

voice encoding means for encoding the inputted voice information;

25 voice decoding means for decoding encoded voice information in received packets; and

voice outputting means for outputting the decoded voice information.

3. A voice communication system according to claim 1, wherein said communication server further includes:

voice encoding means for encoding voice
5 information from said telephone received through said line switching network;

means for editing said encoded voice
information into packets and transmitting the packets to
said communication terminal through said packet
10 switching network;

voice decoding means for decoding the voice
information in the packets from said communication
terminal received through said packet switching network;
and

15 means for transmitting said decoded voice information to said telephone through said line switching network.

4. A voice communication system according to claim 1, wherein said communication terminal further
20 comprises:

means for allowing a user to select
transmission of a mail to another communication terminal
on said packet switching network with which a
communication is desired, when a voice communication
25 negating response is returned from the communication terminal as a result of transmitting a voice communication request to the communication terminal, and transmitting a mail to said communication terminal

without inputting a communication address of said communication terminal when the user selects the transmission of a mail.

5. A voice communication system including a line

5 switching network to which telephones are connected, a
packet switching network to which communication
terminals are connected and which has a communication
address scheme different from a telephone number scheme
of said line switching network, and a communication
0 server connected to said line switching network and said
packet switching network and assigned a communication
terminal address on said packet switching network and a
telephone number on said line switching network,
wherein:

15 said communication terminals connected to said
packet switching network are assigned unique extension
numbers, respectively,

each of said telephones comprises:

means for controlling a communication
20 between said telephone and said communication server,
when a user inputs the telephone number of said
communication server, to set said telephone and said
communication server in a communication available state
and transmitting an extension number inputted by the
25 user to said communication server, and

said communication server comprises:

means for finding a communication terminal
address of a communication terminal to which said

extension number is assigned, based on the extension number transmitted from said telephone, to determine the communication terminal to be connected;

means for transmitting a voice communication request to the determined communication terminal to establish a connection between said communication server and said communication terminal; and

means for receiving voice information transmitted from the telephone having said telephone number, editing the voice information into packets, and transmitting the packets to said communication terminal, while receiving packets transmitted from said communication terminal, and transmitting voice information in the packets to said telephone having the telephone number.

6. A voice communication system according to claim 5, wherein said communication terminal further includes:

voice inputting means for inputting voice information;

voice encoding means for encoding the inputted voice information;

voice decoding means for decoding encoded voice information in received packets; and

voice outputting means for outputting the decoded voice information.

7. A voice communication system according to

claim 5, wherein said communication server further includes:

voice encoding means for encoding voice information from said telephone received through said line switching network;

means for editing said encoded voice information into packets and transmitting the packets to said communication terminal through said packet switching network;

voice decoding means for decoding the voice information in the packets from said communication terminal received through said packet switching network; and

means for transmitting said decoded voice information to said telephone through said line switching network.

8. A voice communication system according to claim 5, wherein said communication terminal further comprises:

means for allowing a user to select transmission of a mail to another communication terminal on said packet switching network with which a communication is desired, when a voice communication negating response is returned from the communication terminal as a result of transmitting a voice communication request to the communication terminal, and transmitting a mail to said communication terminal without inputting a communication address of said

communication terminal when the user selects the transmission of a mail.

9. A voice communication system according to claim 5, wherein said communication server further

5 comprises:

means for transmitting a mail to said communication terminal when a voice communication negating response is returned from said communication terminal as a result of transmitting said voice communication request to said communication terminal.

10. A voice communication system including a line switching network to which telephones are connected, a packet switching network to which communication terminals are connected and which has a communication address scheme different from a telephone number scheme of said line switching network, and a communication server connected to said line switching network and said packet switching network and assigned a communication terminal address on said packet switching network,

15 20 wherein:

said communication terminals connected to said packet switching network are assigned unique telephone numbers, respectively,

each of said telephones comprises:

25 means for controlling a communication between said telephone and said communication server when a user inputs a telephone number assigned to one of said communication terminals, and

said communication server comprises:

means for finding, based on the telephone
number inputted from said telephone, a communication
terminal address of a communication terminal to which
5 the telephone number is assigned to determine the
communication terminal to be connected;

means for transmitting a voice communication
request to the determined communication terminal to
establish a connection between said communication server
10 and said communication terminal; and

means for receiving voice information
transmitted from said telephone, editing the voice
information into packets, and transmitting the packets
to said communication terminal, while receiving packets
15 transmitted from said communication terminal, and
transmitting voice information in the packets to said
telephone.

11. A voice communication system according to
claim 10, wherein said communication terminal further
20 includes:

voice inputting means for inputting voice
information;

voice encoding means for encoding the inputted
voice information;

25 voice decoding means for decoding encoded
voice information in received packets; and

voice outputting means for outputting the
decoded voice information.

12. A voice communication system according to claim 10, wherein said communication server further includes:

voice encoding means for encoding voice information from said telephone received through said line switching network;

means for editing said encoded voice information into packets and transmitting the packets to said communication terminal through said packet switching network;

voice decoding means for decoding the voice information in the packets from said communication terminal received through said packet switching network; and

means for transmitting said decoded voice information to said telephone through said line switching network.

13. A voice communication system according to claim 10, wherein said communication terminal further comprises:

means for allowing a user to select transmission of a mail to another communication terminal on said packet switching network with which a communication is desired, when a voice communication negating response is returned from the communication terminal as a result of transmitting a voice communication request to the communication terminal, and transmitting a mail to said communication terminal

without inputting a communication address of said communication terminal when the user selects the transmission of a mail.

14. A voice communication system according to claim 10, wherein said communication server further comprises:

means for transmitting a mail to said communication terminal when a voice communication negating response is returned from said communication terminal as a result of transmitting said voice communication request to said communication terminal.

15. A voice communication system according to claim 11, wherein said communication server further includes:

voice encoding means for encoding voice information from said telephone received through said line switching network;

means for editing said encoded voice information into packets and transmitting the packets to said communication terminal through said packet switching network;

voice decoding means for decoding the voice information in the packets from said communication terminal received through said packet switching network;

and

means for transmitting said decoded voice information to said telephone through said line switching network.

16. A voice communication system including a line switching network to which telephones are connected, a packet switching network to which communication terminals are connected, and a communication server which is connected to said line switching network and said packet switching network, wherein:

said communication server comprises:

means for receiving voice information transmitted from one of said telephones through said line switching network;

voice encoding means for encoding received voice information;

means for transmitting the encoded voice information to said communication terminal through said packet switching network;

means for receiving encoded voice information transmitted from said communication terminal through said packet switching network;

voice decoding means for decoding the received encoded voice information; and

means for transmitting the decoded voice information to said one telephone through said line switching network.

17. A voice communication system according to claim 5, wherein said communication server comprises a table for holding extension numbers of said communication terminals and communication terminal addresses corresponding to the extension numbers.

18. A voice communication system according to claim 10, wherein said communication server comprises a table for holding telephone numbers of said communication terminals and communication terminal addresses corresponding to the telephone numbers.

19. A voice communication system according to claim 5, wherein:

said line switching network is ISDN, and each of said telephones transmits a voice communication request including an extension number for specifying said communication terminal as a parameter to said communication server, and said communication server finds a communication terminal address of a communication terminal to be connected from the extension number included in the voice communication request.

20. A voice communication system including a line switching network to which telephones are connected, a packet switching network to which communication terminals are connected and which has a communication address scheme different from a telephone number scheme of said line switching network, and a communication server connected to said line switching network and said packet switching network and assigned a communication terminal address on said packet switching network and a telephone number on said line switching network, wherein:

one of the communication terminals connected to said packet switching network is used as a switcher terminal,

each of said telephones comprises:

5 means for controlling a communication between said telephone and said communication server, when a user inputs the telephone number of said communication server, to set said telephone and said communication server in a communication available state,

10 said switcher terminal comprises:

means for connecting said switcher terminal with said communication server in response to a voice communication request from said communication server to set said switcher terminal and said telephone in a communication available state, wherein a switcher can speak with the user of said telephone;

15 means for finding a communication terminal address in response to an input of information for specifying a person to which the user desires to call, said information being obtained by a conversation between the switcher and the user; and

20 means for transmitting a connected terminal determination result including the found communication terminal address to said communication server, and

25 said communication server comprises:

means for transmitting a voice communication request to said switcher terminal, when said switcher terminal and said telephone are set in the communication

available state, to establish a connection between said communication server and said switcher terminal;

means for receiving the connected terminal determination result from said switcher terminal, and

5 transmitting a voice communication request to a communication terminal having the communication terminal address included in the connected terminal determination result to establish a connection between said communication server and said communication terminal;

10 and

means for receiving voice information transmitted from said telephone, editing the voice information into packets, and transmitting the packets to said communication terminal, while receiving packets
15 transmitted from said communication terminal, and transmitting voice information in the packets to said telephone.

21. A voice communication method in a voice communication system including a line switching network
20 to which telephones are connected, a packet switching network to which communication terminals are connected and which has a communication address scheme different from a telephone number scheme of said line switching network, and a communication server connected to said
25 line switching network and said packet switching network and assigned a communication terminal address on said packet switching network, said method comprising the steps of:

transmitting a voice communication request including a telephone number of one of said telephones from one of said communication terminals to said communication server through said packet switching network;

transmitting a call setting request from said communication server which has received said voice communication request to a telephone having the telephone number included in said voice communication request through said line switching network;

returning a call setting accepting response
from said one telephone which has received said call
setting request to said communication server through
said line switching network;

returning a voice communication accepting response from said communication server which has received said call setting accepting response to said communication terminal through said packet switching network; and

in said communication server, receiving voice information transmitted from said one telephone through said line switching network, editing said voice information into packets, and transmitting the packets to said communication terminal through said packet switching network, while receiving packets transmitted from said communication terminal through said packet switching network, and transmitting voice information in

the packets to said one telephone through said line switching network to carry out a communication between said telephone and said communication terminal through said communication server.

- 5 22. A voice communication method in a voice communication system including a line switching network to which telephones are connected, a packet switching network to which communication terminals are connected and which has a communication address scheme different
10 from a telephone number scheme of said line switching network, and a communication server connected to said line switching network and said packet switching network and assigned a communication terminal address on said packet switching network and a telephone number on said
15 line switching network, said method comprising the steps of:

transmitting a call setting request from one of said telephones to said communication server through said line switching network;

- 20 returning a call setting accepting response from said communication server which has received said call setting request to said one telephone through said line switching network;

- determining a communication terminal address
25 of a communication terminal to be connected to said one telephone by said communication server;

transmitting a voice communication request from said communication server to a communication

terminal having said determined communication terminal
address through said packet switching network;

returning a voice communication accepting response from said communication terminal which has received said voice communication request to said communication server through said packet switching network; and

in said communication server, receiving voice information transmitted from said one telephone through said line switching network, editing said voice information into packets, and transmitting the packets to said communication terminal through said packet switching network, while receiving the packets transmitted from said communication terminal through said packet switching network, and transmitting voice information in the packets to said one telephone through said line switching network to carry out a communication between said telephone and said communication terminal through said communication server.